Scranton Army Ammunition Plant
Scranton
Lackawanna County
Pennsylvania

HAER No. PA-76

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Washington, DC 20013-7127

HISTORIC AMERICAN ENGINEERING RECORD

Scranton Army Ammunition Plant

PA-76

Location:	In downtown Scranton, Pennsylvania, within three blocks of the Lackawanna County Courthouse.
Date of Construction:	Established in 1907-1909.
Owner:	Department of the Army
Significance:	The four major buildings at Scranton Army Ammunition Plant were constructed in 1907-1909 as the Scranton Locomotive Shops of the Delaware, Lackawanna & Western Railroad. At the time of construction they were considered part of that period's most advanced concepts regarding planning and design of such facilities.
Historical Report Prepared by:	Robert Ferguson and Stuart E. MacDonald, 1984.
Prepared for Transmittal by:	Robie S. Lange, HABS/HAER, 1985.

EXECUTIVE SUMMARY

Scranton Army Ammunition Plant (Scranton AAP), a part of the Army's Armament, Munitions and Chemical Command (AMCCOM), is a government-owned, contractor-operated shell-production facility located near the center of downtown Scranton, Pennsylvania. Its four major buildings were built in 1907-1909 as locomotive shops for the Delaware, Lackawanna & Western Railroad (D.L. & W), and were minimally modified for shell production when they were transferred to the Army in 1951.

There are no Category I historic properties at Scranton AAP, since none of the buildings can be considered to be unique or to have national significance. However, the complex as an ensemble is a remarkably intact early twentieth-century locomotive shop facility, and the D.L. & W. Railroad played a leading role in the development of the City of Scranton and the region as a whole.

All four major buildings at Scranton AAP — the Pattern Shop (Administration Building, Building 100), the Foundry (Forge Shop, Building 200), the Blacksmith Shop (Heat Treat Building, Building 300), and the Machine and Erecting Shop (Production Building, Building 400) — are Category II historic properties because they are an important example of a highly intact architectural assemblage of historical importance. They are eligible for the National Register of Historic Places and should be nominated.

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PREFACE

This report presents the results of an historic properties survey of the Scranton Army Ammunition Plant (Scranton AAP). Prepared for the United States Army Materiel Development and Readiness Command (DARCOM), the report is intended to assist the Army in bringing this installation into compliance with the National Historic Preservation Act of 1966 and its amendments, and related federal laws and regulations. To this end, the report focuses on the identification, evaluation, documentation, nomination, and preservation of historic properties at the Scranton AAP. Chapter 1 sets forth the survey's scope and methodology; Chapter 2 presents an architectural, historical, and technological overview of the installation and its properties; and Chapter 3 identifies significant properties by Army category and sets forth preservation recommendations. Illustrations and an annotated bibliography supplement the text.

This report is part of a program initiated through a memorandum of agreement between the National Park Service, Department of the Interior, and the U.S. Department of the Army. The program covers 74 DARCOM installations and has two components: 1) a survey of historic properties (districts, buildings, structures, and objects), and 2) the development of archaeological overviews. Stanley H. Fried, Chief, Real Estate Branch of Headquarters DARCOM, directed the program for the Army, and Dr. Robert J. Kapsch, Chief of the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) directed the program for the National Park Service. Sally Kress Tompkins was program manager, and Robie S. Lange was

project manager for the historic properties survey. Technical assistance was provided by Donald C. Jackson.

Building Technology Incorporated acted as primary contractor to HABS/HAER for the historic properties survey. William A. Brenner was BTI's principal-in-charge and Dr. Larry D. Lankton was the chief technical consultant. Major subcontractors were the MacDonald and Mack Partnership and Jeffrey A. Hess. The authors of this report were Robert Ferguson and Stuart E. MacDonald. The authors gratefully acknowledge the help of LTC. Edwin C. Cassidy, Jr., Plant Commander, Captain Patrick Dunkle, Executive Officer, and Mr. William Wary and Mr. Louis Fortuna of the Chamberlain Manufacturing Corporation.

The complete HABS/HAER documentation for this installation will be included in the HABS/HAER collections at the Library of Congress, Prints and Photographs Division, under the designation HAER No. PA-76.

Chapter 1

INTRODUCTION

SCOPE

This report is based on an historic properties survey conducted in 1983 of all Army-owned properties located within the official boundaries of the Scranton Army Ammunition Plant (Scranton AAP). The survey included the following tasks:

- Completion of documentary research on the history of the installation and its properties.

- Completion of a field inventory of all properties at the installation.

- Preparation of a combined architectural, historical, and technological overview for the installation.

- Evaluation of historic properties and development of recommendations for preservation of these properties.

Also completed as a part of the historic properties survey of the installation, but not included in this report, are HABS/HAER Inventory cards for four individual properties. These cards, which constitute HABS/HAER Documentation Level IV, will be provided to the Department of the Army. Archival copies of the cards, with their accompanying photographic

negatives, will be transmitted to the HABS/HAER collections at the Library of Congress.

The methodology used to complete these tasks is described in the following section of this report.

METHODOLOGY

1. Documentary Research

Since the Scranton Army Ammunition Plant (Scranton AAP) was part of a larger manufacturing network, an evaluation of its historical and technological significance requires a general understanding of the wartime ammunition industry. To identify published documentary sources on American ammunition manufacturing during World War II, the Korean War, and the Vietnam War, research was conducted in standard bibliographies of military history, engineering, and the applied sciences. Unpublished sources were identified by researching the historical and technical archives of the U.S. Army Armament, Munitions and Chemical Command (AMCCOM) at Rock Island Arsenal.[1]

In addition to such industry-wide research, a concerted effort was made to locate published and unpublished sources dealing specifically with both the railroad and military history and technology of the Scranton AAP. This site-specific research was conducted primarily at the AMCCOM historical Office at Rock Island Arsenal, the Scranton Public Library, the Commonwealth of Pennsylvania State Historic

Preservation Office in Harrisburg, and the government's and Chamberlain Manufacturing Corporation's files at Scranton AAP.

On the basis of this literature search, a number of valuable sources were identified. These included an extensive collection of architectural and engineering drawings, including original 1907-1909 construction drawings prepared by the D.L. & W; 1953 remodeling drawings prepared for the first contractor-operator; and several published studies on the planning, design, and construction of the Locomotive Shops. The State Historic Preservation Office had no pertinent documentary materials; however, a representative of that office had conducted an on-site inspection in 1979 and concluded that the buildings were likely to be eligible for the National Register of Historic Places.

Army records used for the field inventory included current Real Property Inventory (RPI) printouts that listed all officially recorded buildings and structures by facility classification and date of construction; the installation's property record cards; base maps and photographs supplied by installation personnel; and installation master planning, archaeological, environmental assessment, and related reports and documents. A complete listing of this documentary material may be found in the bibliography.

2. Field Inventory

Architectural and technological field surveys were conducted in April,

1983 by Stuart MacDonald. Following general discussions, Capt. Patrick Dunkle, Executive Officer at Scranton AAP, conducted a comprehensive tour of the production facilities and explained the methods of production. Subsequently, the surveyor was permitted access to all exterior areas without escort.

Field inventory procedures were based on the HABS/HAER Guidelines for Inventories of Historic Buildings and Engineering and Industrial Structures.[2] All areas and properties were visually surveyed. Building locations and approximate dates of construction were noted from the installation's property records and field-verified. Interior surveys were made of each building to permit adequate evaluation of architectural features, building technology, and production equipment. In the Forge Shop (Building 200), the Heat Treat Building (Building 300), and the Production Shop (Building 400), individual machine types were examined as well as overall industrial processes.

Field inventory forms were prepared for, and black and white 35 mm photographs taken of all buildings and structures through 1945 except basic utilitarian structures of no architectural, historical, or technological interest. Field inventory forms were also completed for representative post-1945 buildings and structures.[3] Information collected on the field forms was later evaluated, condensed, and transferred to HABS/HAER Inventory cards.

3. Historical Overview

A combined architectural, historical, and technological overview was prepared from information developed from the documentary research and the field inventory. It was written in two parts: 1) an introductory description of the installation, and 2) a history of the installation by periods of development, beginning with pre-military land uses. Maps and photographs were selected to supplement the text as appropriate.

The objectives of the overview were to 1) establish the periods of major construction at the installation, 2) identify important events and individuals associated with specific historic properties, 3) describe patterns and locations of historic property types, and 4) analyze specific building and industrial technologies employed at the installation.

4. Property Evaluation and Preservation Measures

Based on information developed in the historical overviews, properties were first evaluated for historical significance in accordance with the eligibility criteria for nomination to the National Register of Historic Places. These criteria require that eligible properties possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that they meet one or more of the following:[4]

A. Are associated with events that have made a significant contribution to the broad patterns of our history.

B. Are associated with the lives of persons significant in the nation's past.

C. Embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction.

D. Have yielded, or may be likely to yield, information important in pre-history or history.

Properties thus evaluated were further assessed for placement in one of five Army historic property categories as described in Army Regulation 420-40:[5]

Category I	Properties of major importance
Category II	Properties of importance
Category III	Properties of minor importance
Category IV	Properties of little or no importance
Category V	Properties detrimental to the significance of adjacent historic properties.

Based on an extensive review of the architectural, historical, and technological resources identified on DARCOM installations nationwide, four criteria were developed to help determine the appropriate categorization level for each Army property. These criteria were used to assess the importance not only of properties of traditional historical interest, but also of the vast number of standardized or prototypical buildings, structures and production processes that were built and put into service during World War II, as well as of properties associated with many post-war technological achievements. The four criteria were often used in combination and are as follows:

1) Degree of importance as a work of architectural, engineering, or industrial design. This criterion took into account the qualitative factors by which design is normally judged: artistic merit, workmanship, appropriate use of materials, and functionality.

2) Degree of rarity as a remaining example of a once widely used architectural, engineering, or industrial design or process. This criterion was applied primarily to the many standardized or prototypical DARCOM buildings, structures, or industrial processes. The more widespread or influential the design or process, the greater the importance of the remaining examples of the design or process was considered to be. This criterion was also used for non-military structures such as farmhouses and other once prevalent building types.

3) Degree of integrity or completeness. This criterion compared the current condition, appearance, and function of a building, structure, architectural assemblage, or industrial process to its original or most historically important condition, appearance, and function. Those properties that were highly intact were generally considered of greater importance than those that were not.

4) Degree of association with an important person, program, or event. This criterion was used to examine the relationship of a property to a famous personage, wartime project, or similar factor that lent the property special importance.

The majority of DARCOM properties were built just prior to or during World War II, and special attention was given to their evaluation. Those that still remain do not often possess individual importance, but collectively they represent the remnants of a vast construction undertaking whose architectural, historical, and technological importance needed to be assessed before their numbers diminished further. This assessment centered on an extensive review of the military construction of the 1940-1945 period, and its contribution to the history of World War II and the post-war Army landscape.

Because technology has advanced so rapidly since the war, post-World War II properties were also given attention. These properties were evaluated in terms of the nation's more recent accomplishments in weaponry, rocketry, electronics, and related technological and

scientific endeavors. Thus the traditional definition of "historic" as a property 50 or more years old was not germane in the assessment of either World War II or post-war DARCOM buildings and structures; rather, the historic importance of all properties was evaluated as completely as possible regardless of age.

Property designations by category are expected to be useful for approximately ten years, after which all categorizations should be reviewed and updated.

Following this categorization procedure, Category I, II, and III historic properties were analyzed in terms of:

- Current structural condition and state of repair. This information was taken from the field inventory forms and photographs, and was often supplemented by rechecking with facilities engineering personnel.

- The nature of possible future adverse impacts to the property. This information was gathered from the installation's master planning documents and rechecked with facilities engineering personnel.

Based on the above considerations, the general preservation recommendations presented in Chapter 3 for Category I, II, and III historic properties were developed. Special preservation

recommendations were created for individual properties as circumstances required.

5. Report Review

Prior to being completed in final form, this report was subjected to an in-house review by Building Technology Incorporated. It was then sent in draft to the subject installation for comment and clearance and, with its associated historical materials, to HABS/HAER staff for technical review. When the installation cleared the report, additional draft copies were sent to DARCOM, the appropriate State Historic Preservation Officer, and, when requested, to the archaeological contractor performing parallel work at the installation. The report was revised based on all comments collected, then published in final form.

NOTES

1. The following bibliographies of published sources were consulted: Industrial Arts Index, 1938-1957; Applied Science and Technology Index, 1958-1980; Engineering Index, 1938-1983; Robin Higham, ed., A Guide to the Sources of United States Military History (Hamden, Conn.: Archon Books, 1975); John E. Jessup and Robert W. Coakley, A Guide to the Study and Use of Military History (Washington, D.C.: U.S. Government Printing Office, 1979); "Military Installations," Public Works History in the United States, eds., Suellen M. Hoy and Michael C. Robinson (Nashville: American Association for State and Local History, 1982), pp. 380-400. AMCCCOM (formerly ARRCOM, or U.S. Army Armament Materiel Readiness Command) is the military agency responsible for supervising the operation of government-owned munititions plants; its headquarters are located at Rock Island Arsenal, Rock Island, Illinois. Although there is no comprehensive index to AMCCOM archival holdings, the agency's microfiche collection of unpublished reports is itemized in ARRCOM, Catalog of Common Sources, Fiscal Year 1983, 2 vols. (no pl.: Historical Office, AMCCOM, Rock Island Arsenal, n.d.).

2. Historic American Buildings Survey/Historic American Engineering Record, National Park Service, Guidelines for Inventories of Historic Buildings and Engineering and Industrial Structures (unpublished draft, 1982).

3. Representative post-World War II buildings and structures were defined as properties that were: (a) "representative" by virtue of construction type, architectural type, function, or a combination of these, (b) of obvious Category I, II, or III historic importance, or (c) prominent on the installation by virtue of size, location, or other distinctive feature.

4. National Park Service, How to Complete National Register Forms (Washington, D.C.: U.S. Government Printing Office, January 1977).

5. Army Regulation 420-40, Historic Preservation (Headquarters, U.S. Army: Washington, D.C., 15 April 1984).

Chapter 2

HISTORICAL OVERVIEW

Background

The Scranton Army Ammunition Plant (Scranton AAP), a government-owned, contractor-operated installation, is located in downtown Scranton, Pennsylvania, within three blocks of the Lackawanna County Courthouse (Figure 1). On its 15.3 acre site, the plant occupies four buildings, the greater part of the building complex constructed in 1907-1909 as the Scranton Locomotive Shops of the Delaware, Lackawanna & Western Railroad (D.L.&W) (Figure 2).

The five-story Pattern Shop now houses the plant's administrative offices; the Foundry is now called the Forge Shop; and the Blacksmith Shop now contains heat-treatment facilities. The Machine and Erecting Shop, by far the largest building on the site, now houses the production and paint lines. Like the Foundry and Blacksmith Shop, it is a one-story structure with a flat roof with light monitors, a typical late-nineteenth- and early-twentieth-century factory configuration. This complex has been called "an excellent example of turn-of-the-century industrial architecture"[1] and, though minimally remodelled in 1952-1953, can still be seen as contributing substantially to the historic integrity of industrial Scranton, not least through the very direct links between the D.L. & W R.R. and the development of the city and region as a whole.

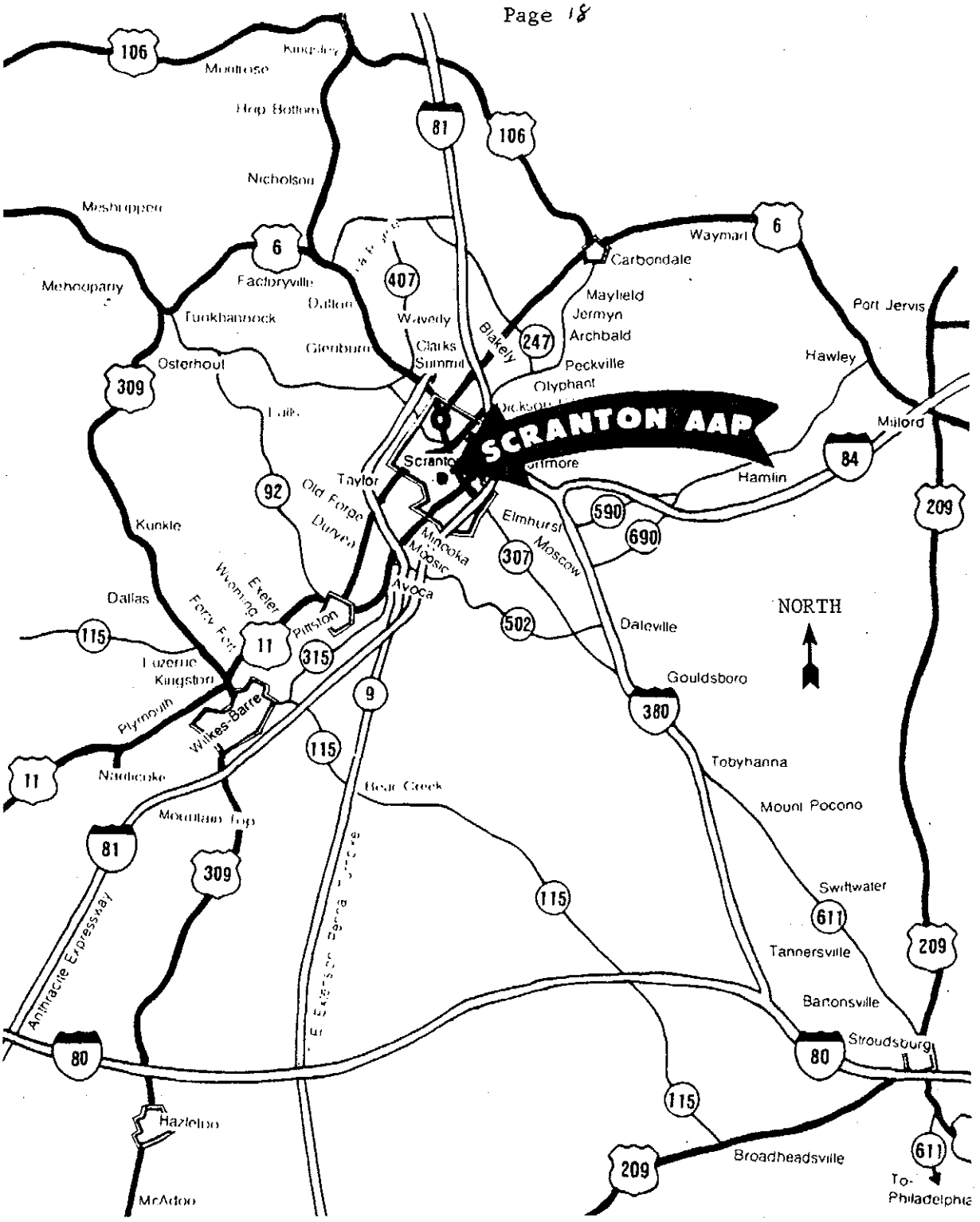

Figure 1: Scranton Army Ammunition Plant Location Map. (Source: Government files, Scranton AAP.)

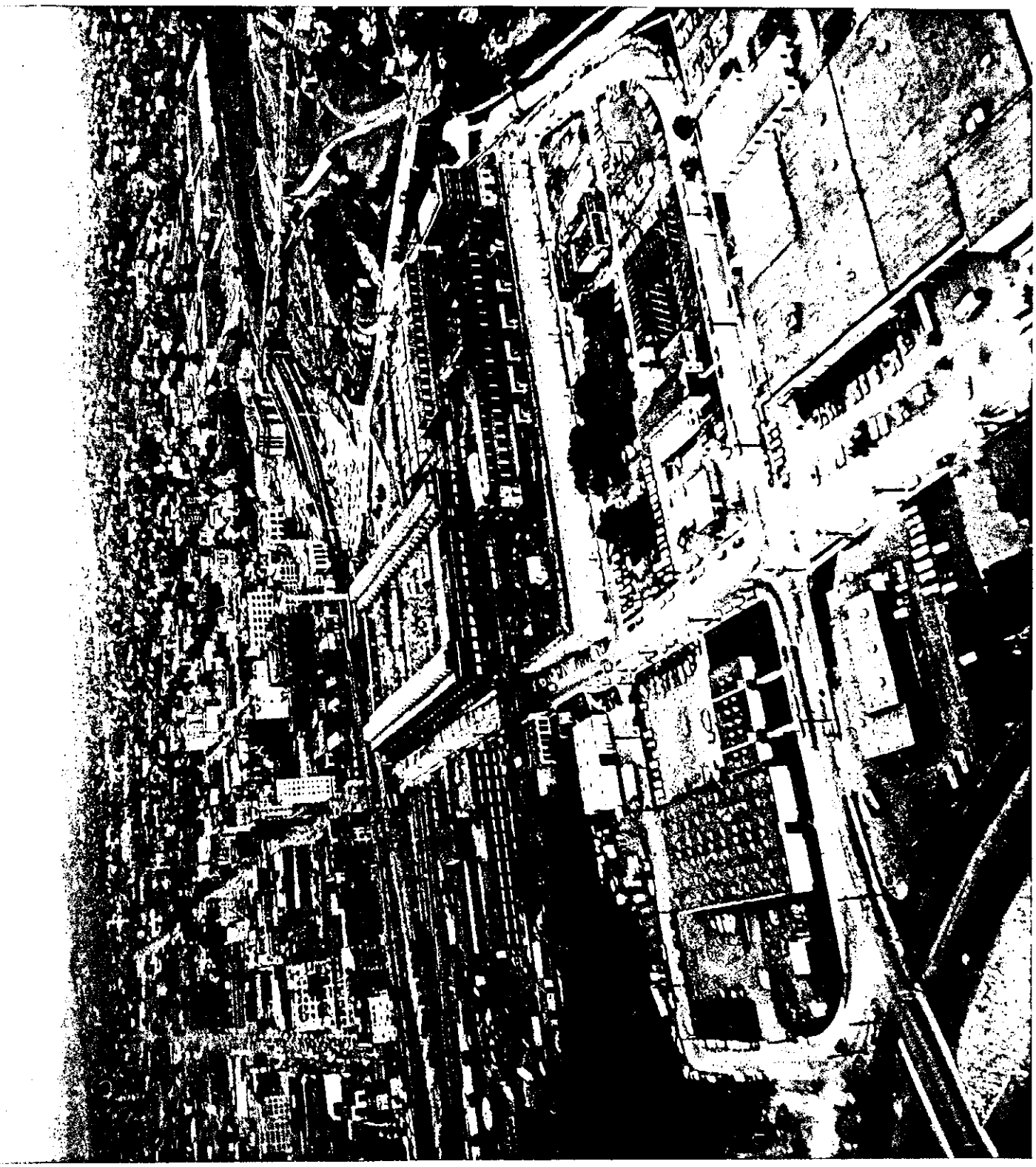

Figure 2: Aerial view showing Scranton Army Ammunition Plant. View from the west. Undated. (Source: U.S. Army photograph.)

In 1951, during mobilization for the Korean War, the U.S. Army Ordnance Corps acquired the locomotive shops and remodelled them for the manufacture of large-caliber artillery shells and component parts. There were and are no facilities for handling explosives; the shells produced at Scranton are shipped elsewhere for loading. Eight-inch, 155-millimeter, and 175-millimeter shells and parts were produced by the U.S. Hoffman machinery Corporation, which operated the plant under contract from 1953 until 1963. It was during this period, and at this plant, that the process for forging shells from commercial-grade steel, instead of the more expensive shell-quality steel, was developed.

In 1963, the Chamberlain Manufacturing Company of Waterloo, Iowa took over operation of the Scranton AAP. It has since produced various types of shells on a fixed-cost basis. As of January, 1983, around 700 personnel were employed, down from the high of over 1,800 in 1968. Mobilized production capacity is over 200,000 shells per month. No 175-mm projectiles are currently being produced, although they remain among the plant's capabilities. Several types of 8" and 155-mm projectiles are currently in production.

PRE-MILITARY LAND USE

Coal production and metalsmithing, including the making of munitions, have figured prominently in the development of northeastern Pennsylvania since the earliest days of white settlement there. Anthracite coal, dug in the Lackawanna Valley by the Gore family since 1771, was used in ammunition production at Washington's arsenal at Carlisle during the Revolution.

Ebenezer Slocum, whose blacksmith shop of 1798 was among the first buildings on the site of present-day Scranton (this part of the valley was called "Slocum's Hollow"), was himself a military man.[2]

The settlement around Slocum's shop, grist and sawmills remained quite small until 1840, when the enterprising brothers George and Sheldon Scranton bought 503 acres of land in Slocum's Hollow for its coal and iron deposits, and established mines and furnaces there. In only one year, the Scrantons had built up a successful iron nailmaking business some seventy-five miles away at Oxford, New Jersey. Their acquisition in 1839 of the Oxford Furnace, active since 1743, provides another connection with munitions-making, since the Oxford Furnace had supplied cannon balls for the French-and-Indian and Revolutionary Wars, as it was later to do for the Civil War.[3]

In buying the Slocum's Hollow land, the Scrantons seized the opportunity offered by recently-developed techniques for smelting iron with anthracite coal[4] to take control of their fuel source at the same time that they expanded their operation. The Harrison Furnace[5], begun in Slocum's Hollow in September, 1840, was first successfully "blown in" on January 18, 1842[6], and its remains are still standing, immediately across Cedar Avenue to the east from the locomotive shops, the present Scranton Army Ammunition Plant. "By July of 1843 the Scrantons were making an average of 40 tons of iron a week,"[7] and they began around 1843 to experiment with the production of iron rail. By 1848, when the firm of Scrantons and Platt was the major if not the only domestic supplier of "T" rail[8], they thought it prudent to bring the unpredictable factor of transportation to market under their

control, as they had already done with supplies.[9] A series of building ventures, acquisitions and consolidations of existing roads resulted in the incorporation of the Delaware, Lackawanna & Western Railroad Company in 1853. The pattern of expansion by merger was to be repeated in the growth of the railroad from a subsidiary of the Scranton's iron works to their major holding; and it was not with iron but with another originally secondary product, coal, that the name of the D.L. & W., the "Road of Anthracite," was to become permanently identified.

The diversification of the D.L. & W. into traffic other than iron and coal was begun by Samuel Sloan, who served the railroad as president from 1867 to 1899. But it is William Haynes Truesdale, who took office in 1899, who is credited with the aggressive and eventually total transformation of the road into what was advertised as "the most highly developed railroad in America."[10] It was as part of Truesdale's modernization program, and with the program's "state-of-the-art" excellence, that the Scranton Locomotive Shops were constructed in 1907-1909[11] (Figure 3, Figure 4).

The new shops were built adjacent to the railroad's existing shops, on a site acquired from the Lackawanna Coal & Iron Company[12] (Figure 5). This site, in the heart of Scranton, had the obvious advantages of rail and work-force access, and the less obvious advantage of a steep slope toward the south, which had previously been partially filled with slag and enclosed by a dry masonry retaining wall along three sides of the site. The wall was now raised by six feet, in concrete, and the grade raised, permitting a viaduct crossing of Washington Avenue, which otherwise would have divided the site, and also permitting the construction, with minimum

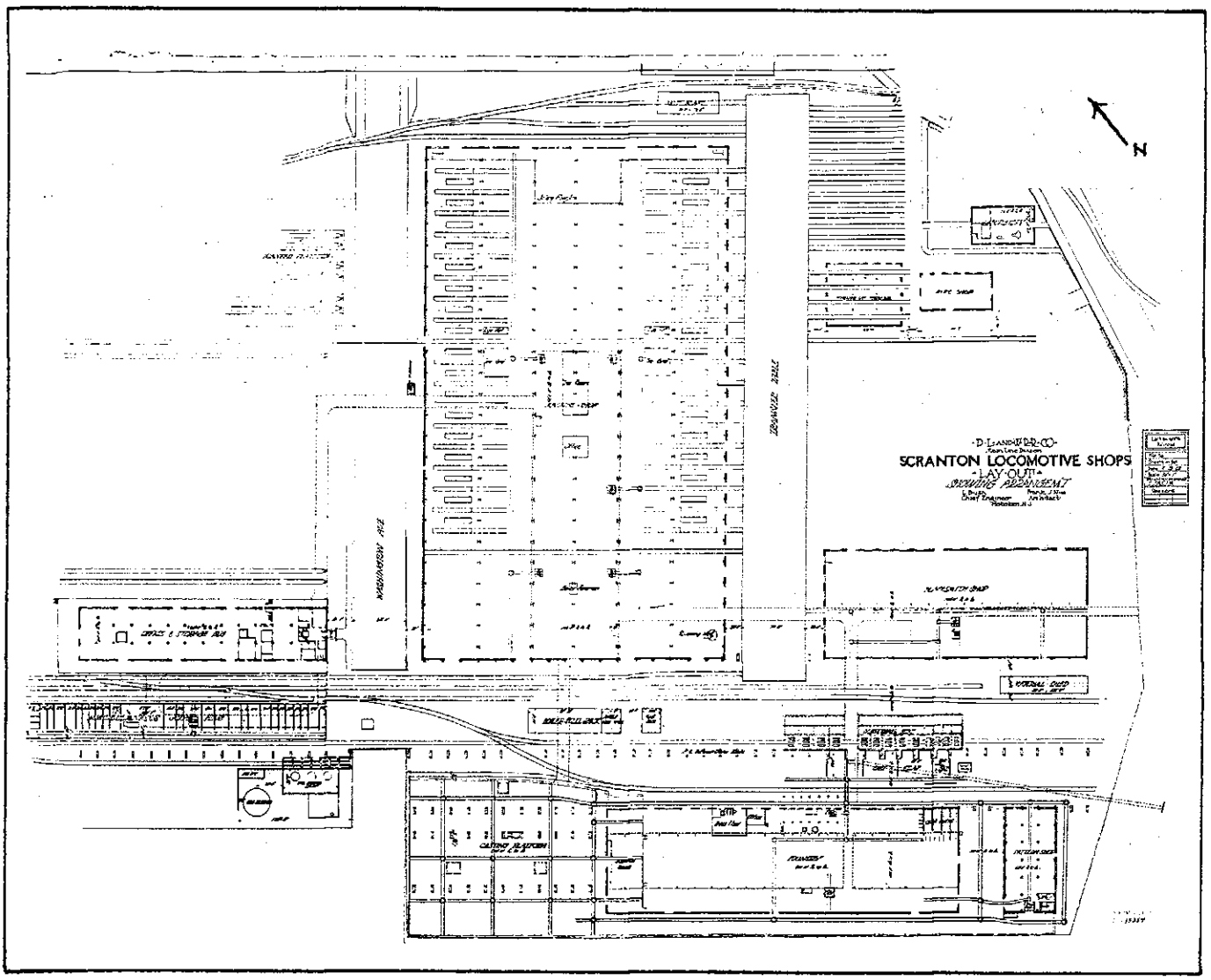

Figure 3: Scranton Locomotive Shops. Original site plan. Construction drawing, 1908. (Source: Scranton AAP.)

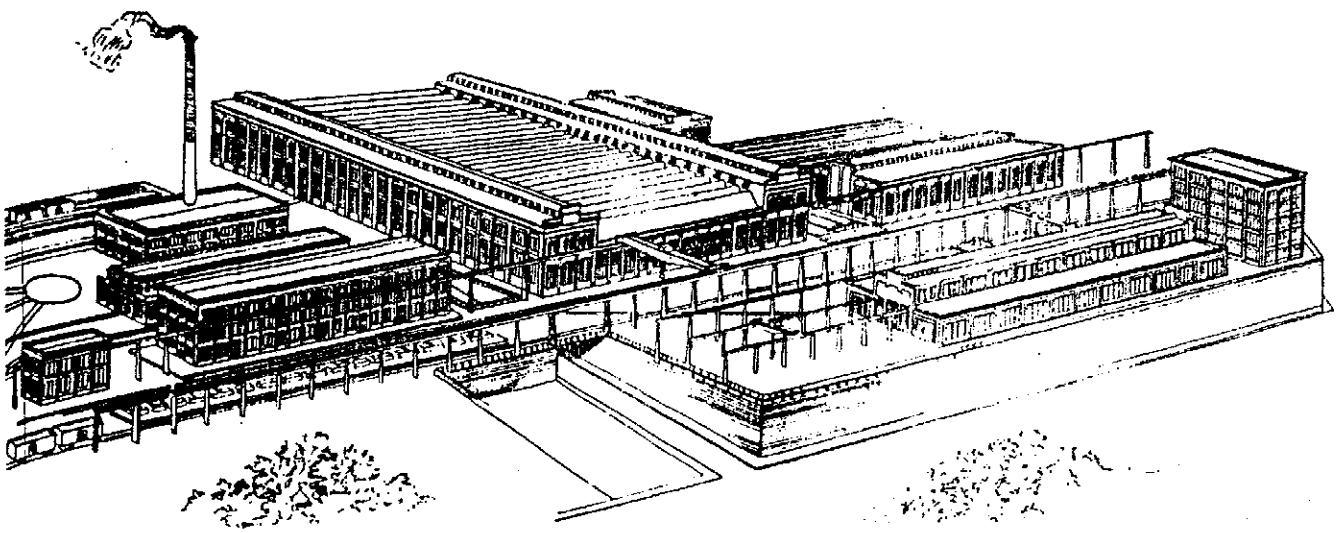

Figure 4: Scranton Locomotive Shops. Schematic design, aerial perspective drawing, view from west, 1907. (Source: Railway Age 43, April 12, 1907, 597.)

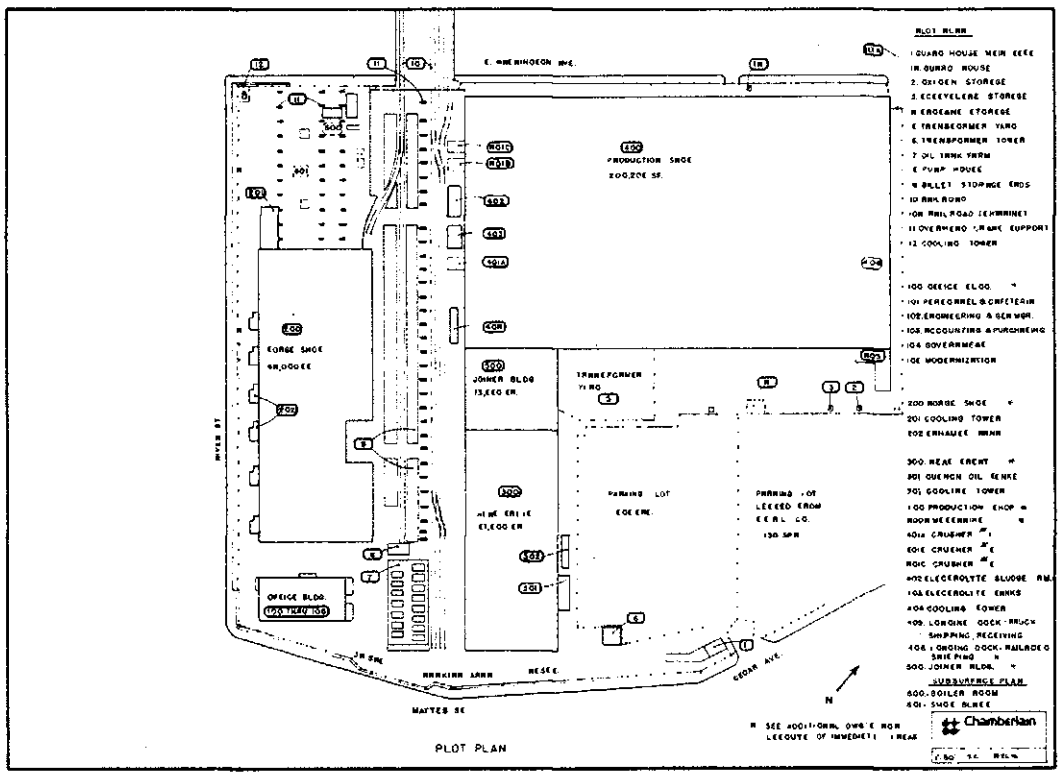

Figure 5: Scranton AAP. Present site plan. Chamberlain Manufacturing Corp. drawing, 1978. (Source: Scranton AAP.)

excavation, of an extensive basement and subway system linking all the shop buildings. Provided with its own 3-foot gauge electric tram, this subway system was intended, with the two above-ground ten-ton-capacity travelling cranes, to minimize work slowdowns due to internal traffic congestion, apparently a problem in a shop complex where such large and heavy objects as locomotives and their parts are handled within tight spatial constraints.[13]

This concern for careful planning seems to have been maintained throughout the project. As noted in an editorial published in the Railway Age Gazette shortly after the completion of the Scranton Shops:

> [The Scranton Locomotive Shops] are interesting because they show not only the tendency of the times but also the tendency, as applied to the equipment of a machine shop, of making a careful study of requirements before a step is taken in execution, and then blazing the way by carefully considered plans. The new plan does away with the old method of depending upon someone's judgement as to how many lathes and planes will be required for a certain maintenance, a judgement that may have been based on experience in a shop poorly equipped, and grown from small beginnings by innumerable accretions that possessed no semblance of unity. At Scranton the scheme was worked out upon the fundamental basis, in the first place, of the thorough analysis of the time and tool required for the execution of each and every movement that enters into the maintanance and construction of a modern locomotive. This done, these movements of elements of the work were segregated and classified in groups so that work on similar or related parts should be done in the same place, and, as far as possible, with the same tools. The exact relationship between these groups was then studied, and they were so arranged with reference to each other that there shall be a steady progress of the work through from one tool to another as it is changed from its rough to its finished condition. . . .Up to the present, no one has made a more thoroughly scientific study of shop layouts, and the result is at least deserving of the most careful and scrutinizing attention of all who may have a similar problem to solve.[14]

The site design was worked out under Lincoln Bush, the designer of the widely used Bush train shed.[15] He served the D.L. & W. as Chief Engineer from 1903-1908. In 1909 he was succeeded by George J. Ray, engineer of the locally famous Tunkhannock Viaduct.[16] Ray's name appears as Chief Engineer on the drawings for the Machine and Erecting Shop. The architect for all the buildings was Frank J. Nies of Hoboken, New Jersey. Although the drawings for the Machine and Erecting Shop bear the latest dates, all of the major buildings seem to have been under construction at the same time. It will be convenient to consider them in the numerical order now used by Scranton AAP.

Pattern Shop (Building 100) (Figure 6, Figure 10)

The Pattern Shop, now called the Administration Building, is a 60' by 120' structure of five stories and a basement, located at the southeast corner of the site. Unlike the other shop buildings, the Pattern Shop is built on a reinforced-concrete frame, probably reflecting concern for fireproofing in a building where much lumber was to be handled and stored.[17] The building is clad in brick, with concrete on the ground floor, lintels, cornice, and attic story.

Of all the shops, this one exhibits the greatest (almost the only) pretension to architectural style, with its Palladian division into base ("rusticated" concrete), pilastered body (with corbelled bays recessed between pilasters, a treatment used on all the major brick-clad buildings on the site), and attic (with projecting cornice, and parapet obscuring the low-pitched hip roof.) The shop for making the wooden patterns occupied

only the ground floor. Lumber was received and stored in the basement, and patterns were stored in the upper four floors, each of which save the fifth had a cast-iron mezzanine level to facilitate access to the steel storage shelves.

Foundry (Building 200) (Figure 9, Figure 11)

The Foundry, now called the Forge Shop, is located along the south edge of the site at the top of the retaining wall, its ground floor level being about 50 feet above adjacent River Street. This part of the site, behind the retaining wall, had been filled with slag by tie Lackawanna Coal & Iron Company, former tenants of the site, and this condition determined the location for the Foundry:

> It was desirable that no machinery involving heavy jarring should be placed close to the edge of this fill, and, therefore, the foundry, having no steam hammers or very heavy moving load, was located there.[18]

The 120' by 400' building, on a concrete foundation, is framed in steel and clad in brick, with precast concrete sills, lintels, cap, and building identification signs. Transversely, there are three structural bays, the center bay having a roof monitor raised in two levels for light and ventilation. Compacted dirt originally served as the interior floor surface. The elevated charging platform and office have reinforced concrete floors supported on steel columns. The basement is built only under the side bays, with elevator access from the main floor to the subway trams. Directly outside the west end of the building is the concrete

casting platform. The foundry was designed for a normal production capacity of 40 tons, and an emergency capacity of 70 tons, per day.

Blacksmith Shop (Building 300) (Figure 8, Figure 12)

The Blacksmith Shop, now called the Heat Treat Building, is located to the north of the Pattern Shop and Foundry. There is a concrete foundation, with basement and subway tram access and storage bins under part of the building. The structural frame is of steel, and the cladding of brick, with sills, cap, sign, and some lintels of concrete. A light and ventilation monitor runs the length of the roof.

Machine and Erecting Shop (Building 400) (Figure 7, Figure 13)

The Machine and Erecting Shop, now called the Production Shop, is 344' by 582', covering the northwest corner of the site. The steel-framed, brick-clad building is divided transversely into six structural bays, of which the outer two have raised roofs with clerestory windows. There areas were used for erecting (assembling) or working on complete locomotives. Proceeding inward, the heavy work bays come next; the two central bays, situated over the basement and connected to it by elevators, stairs and hatches, were the light work bays. All four of the inner bays are covered by a sawtooth skylight roof. Varous overhead travelling cranes serve the four outer bays. A mezzanine, designed for light work and intended to be expanded as needed, was begun along the north end of the building at the time of construction and later extended to a total depth of 135 feet The Machine Shop was estimated shortly after construction to have the capacity

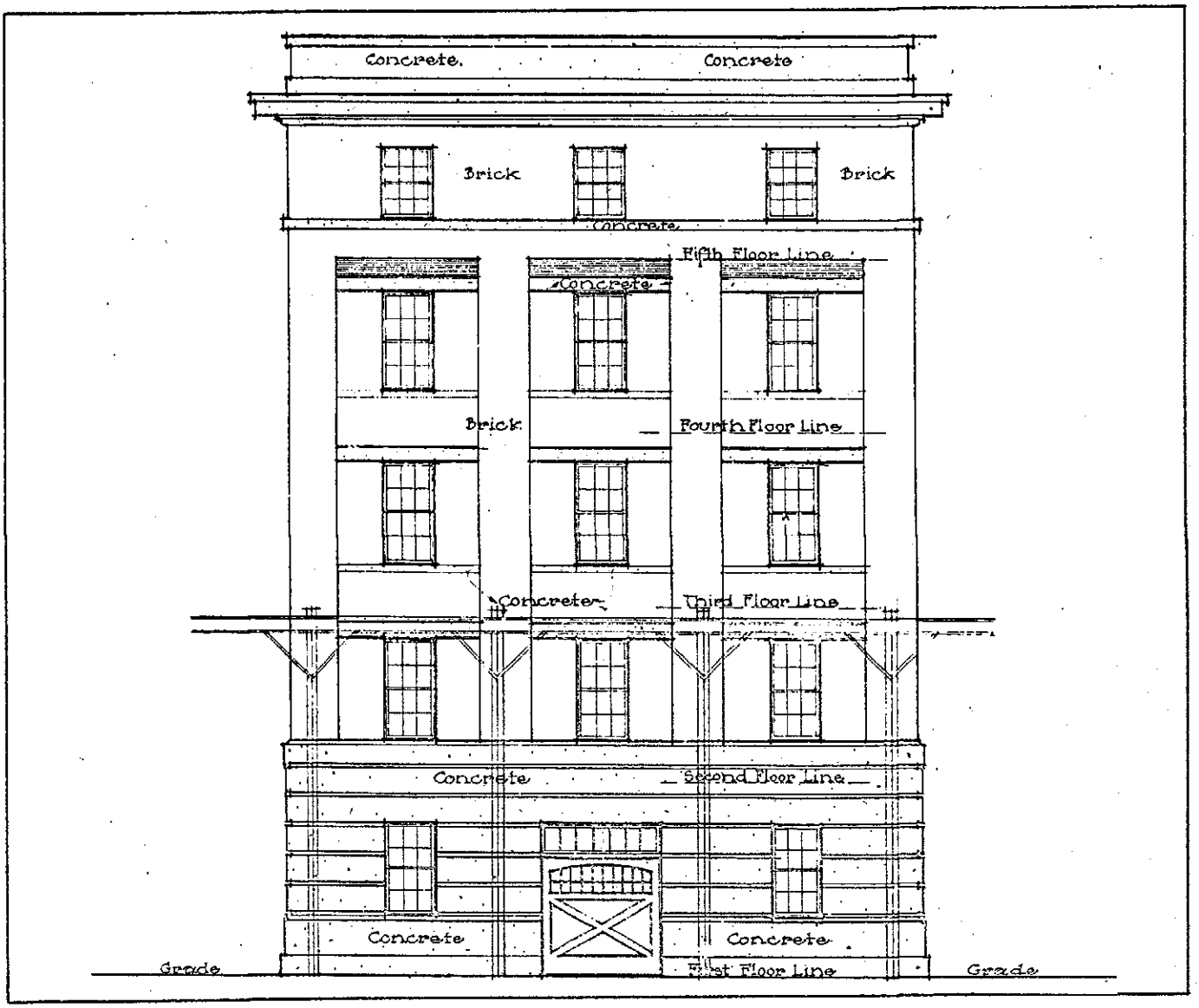

Figure 6: Pattern Shop (now Office Building, No. 100). North Elevation. Construction drawing, 1907. (Source: Scranton AAP.)

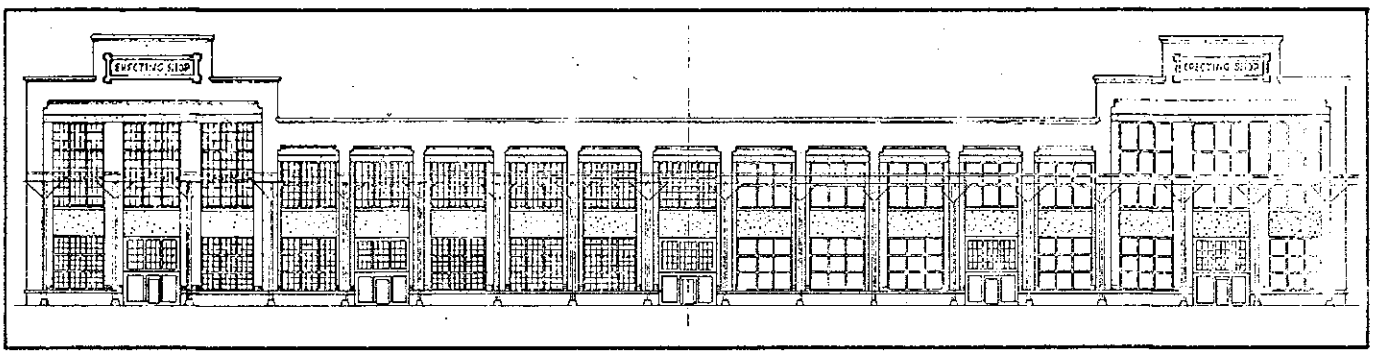

Figure 7: Machine & Erecting Shop (now Production Shop, No. 400). South Elevation. Construction drawing, 1908. (Source: Scranton AAP.)

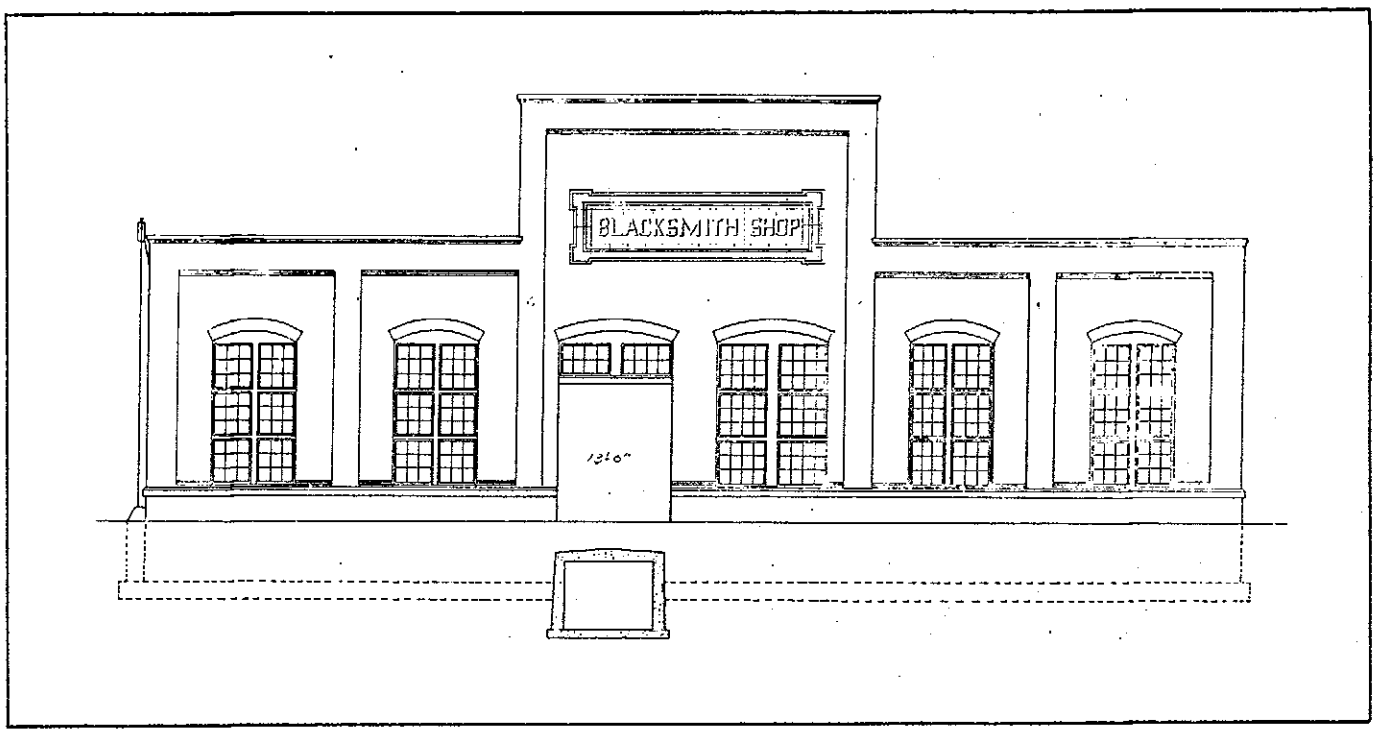

Figure 8: Blacksmith Shop (now Heat Treat Building, No. 300). East Elevation. Construction drawing, 1907. (Source: Scranton AAP.)

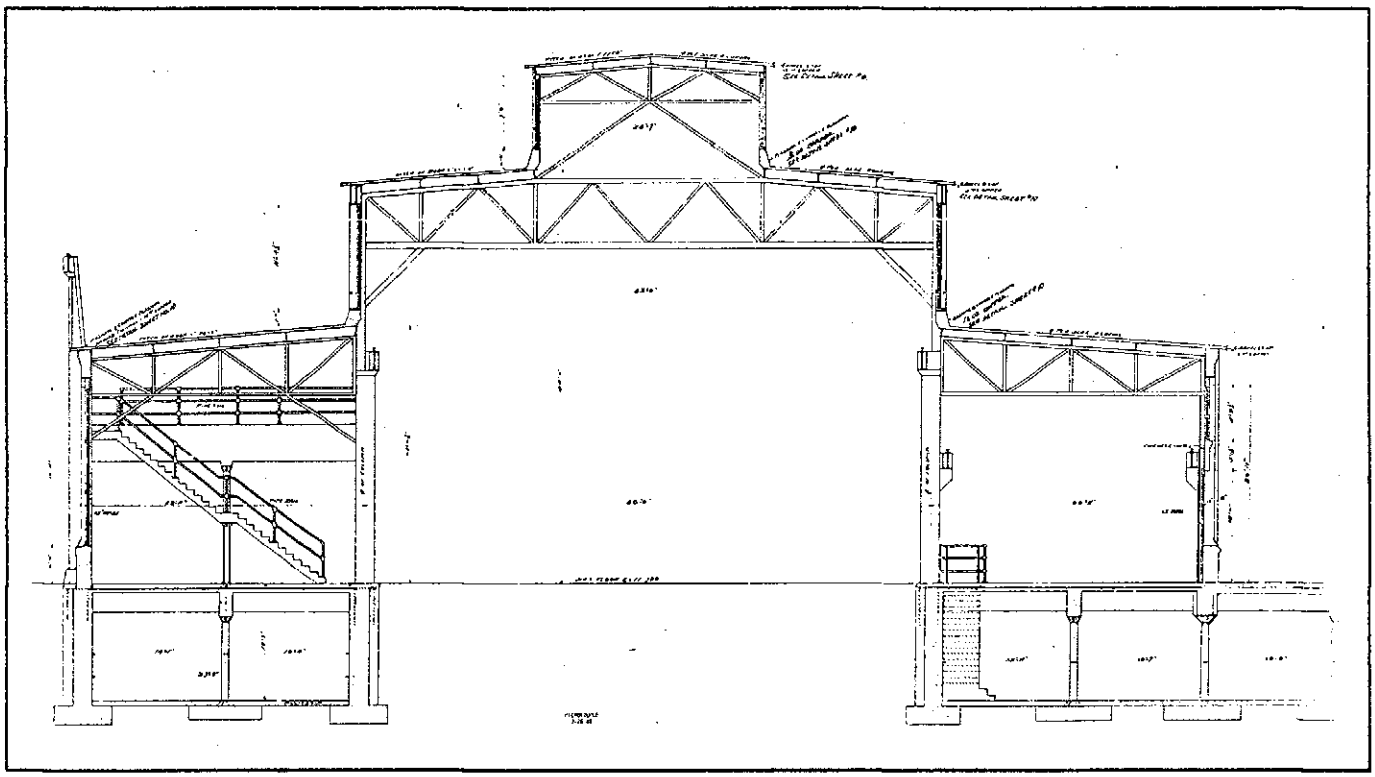

Figure 9: Foundry (now Forge Shop, No. 200). Transverse Section. Construction drawing, 1907. (Source: Scranton AAP.)

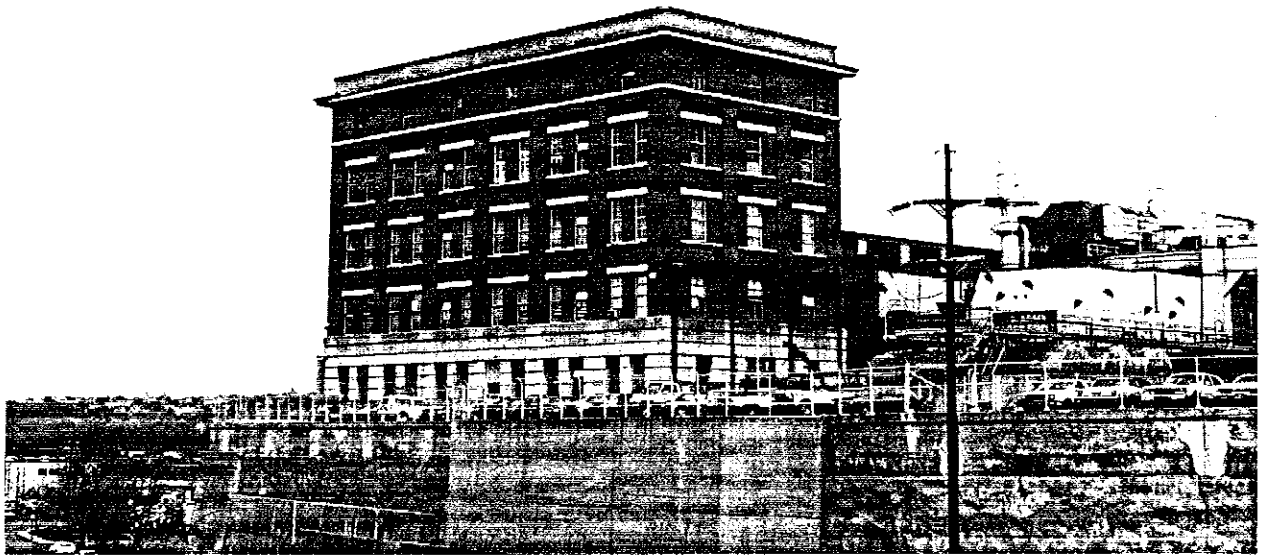

Figure 10: Photograph taken in 1983 showing the Office Building (No. 100), originally the Pattern Shop. View from the northeast. (Source: field inventory photograph.)

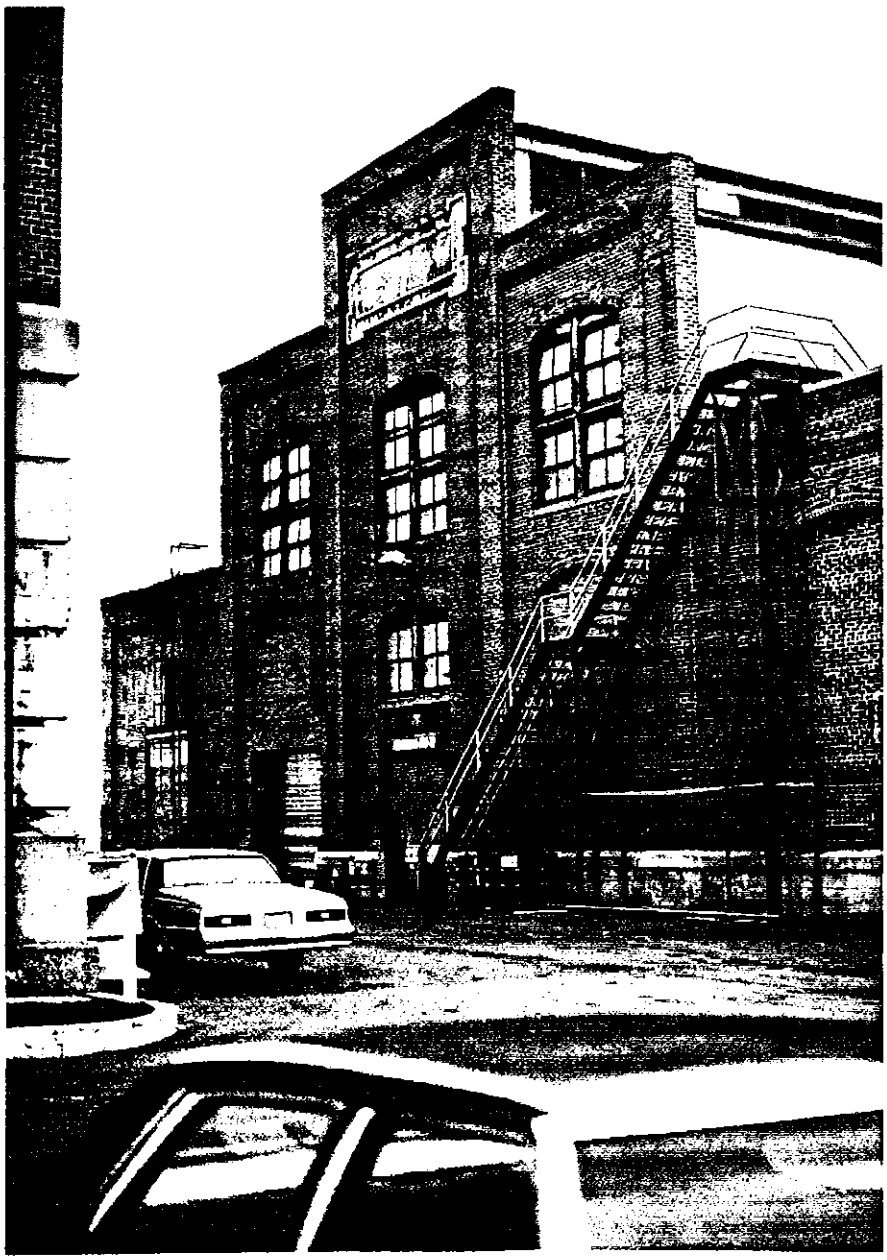

Figure 11: Photograph taken in 1983 showing the Forge Shop (No. 200), originally the Foundry. View from the east. (Source: field inventory photograph.)

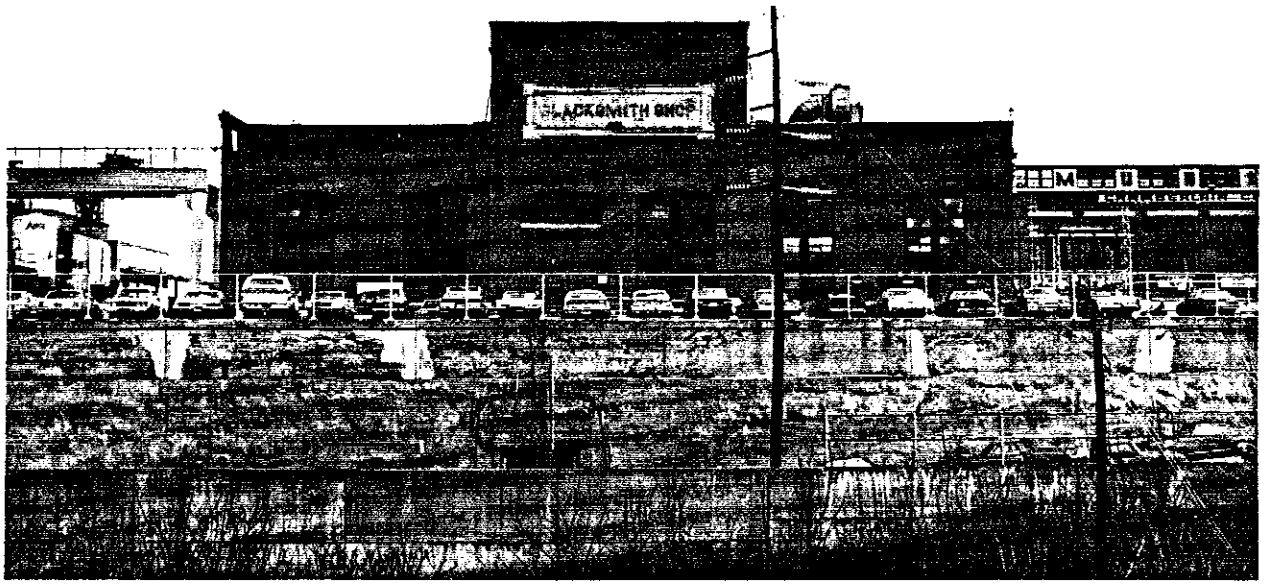

Figure 12: Photograph taken in 1983 showing the Heat Treat Building (No. 300), originally the Blacksmith Shop. View from the southeast. (Source: field inventory photograph.)

Figure 13: Photograph taken in 1983 showing the Production Shop (No. 400), originally the Machine & Erecting Shop. View from the east. (Source: field inventory photograph)

to build four new locomotives per month, while making general repairs on thirty.

Other Buildings

Various material-handling and storage yards and sheds, and at least seven smaller buildings were also built on the site. These included the Firing-Up House, The Sand Blast House, the Pipe Shop, the two-story Laboratory, and, on the other side of Washington Avenue to the West, the four-story Office and Storage Building and the Gas House. The latter three buildings were, like the Pattern Shop, constructed on reinforced concrete frames (the Gas House was entirely of concrete), probably for reasons of fire safety. No power plant was originally constructed at the Scranton Shops, despite the appearance of one in early schematic designs. Power for driving the machines was obtained from the D.L. & W.'s Hampton Power Plant, some three and a half miles from the locomotive shops. At some later date, a Power House was built at the locomotive shops, not, as the early plans indicated, west of Washington Avenue with the Office and Storage Building, but north of the Machine Shop.[19]

KOREAN WAR

Site Selection and the First Wave of Military Construction

During the mobilization effort due to the Korean emergency, the U.S. Army Ordnance Corps acquired the larger part of the Scranton Locomotive Shops from the D.L. & W. Railroad Co. by condemnation in 1951.[20] The boundaries

of the acquired property ended at Washington Avenue on the west, thus excluding the Office and Storage Building and the Gas House as well as miscelleneous storage bins; and at the railroad tracks directly north of the Machine and Erecting Shop on the north, thus excluding the Sand Blast House and the Power House.[21] All the other major buildings and facilities of the Scranton Locomotive Shops were on the 15.3-acre tract transferred to the Army.

During 1952 and 1953, the locomotive shops were rehabilitated and converted for the manufacture of large-caliber shells. The remodeling drawings are by the firm of Gilboy and O'Malley, Engineers and Architects, of Philadelphia, Scranton, and London, for U.S. Hoffman Machinery Corporation of Scranton, the first contractor to operate the Scranton AAP. Several small structures such as the guard houses and loading dock shelters were constructed; and the four major buildings on the site were remodeled.

The Pattern Shop was renamed the Administration Building (Building 100), and remodeled to house the administrative offices for the plant. The cast-iron mezzanines and steel shelves on the upper floors had already been "removed for the Railroad Company by a scrap dealer."[22] All the woodworking machinery was also removed. There were two significant changes to the exterior. The dolly transport system track entrance on the north side of the building was converted into the main entrance, with aluminum doors, redwood siding infill, and an aluminum-faced canopy (the corresponding entrance on the south side was bricked up). On the west side, a five-story fire escape was constructed, with floor-level openings

cut through the brick spandrels below four existing window openings, the tops of which were then infilled with masonry.

The conversion of the Foundry into the Forge Shop (Building 200), the Blacksmith Shop into the Heat Treat Building (Building 300), and the Machine and Erecting Shop into the Production Shop (Building 400) all followed the same pattern. A few openings were closed with masonry, and low-level operating sash were replaced with new pivoting metal sash. Most other existing sash, including operating sash in the roof monitors, was retained, except in the Heat Treat Building, where the roof monitor openings were fitted with electrically-operated louvers. In the Production Shop, the sawtooth skylights were covered with plywood and shingles, except at the north end of the building over the mezzanine, where new continuous metal sash was installed. All of the machinery used by the railroad was removed from all of these buildings, and the original sand and cinder floors in the Forge Shop and Heat Treat Building were replaced with concrete, but the available information does not indicate whether this was done during the remodeling of 1952-1953, or earlier.[23]

Technology

The Scranton AAP was activated in December, 1953, after nearly 4000 pieces of equipment had been installed at a cost of $16,437,127. Originally, it produced 8" (M106) and 155 mm (M107) projectiles; a contract for 175 mm projectiles was awarded in 1957.

Unlike small-arms ammunition, which is manufactured as self-contained cartridges, large-caliber ammunition is literally put together on the battlefield. Primer, propellant, and shell are each loaded separately into the breach of the cannon, "since one of these shells with an attached cartridge case loaded with the propelling charge would be too heavy to handle on the firing line."[24] The shell is essentially a hollow steel casing filed with explosives and tipped with a detonating fuse. Each of these shell parts is manufactured by separate munitions works, and final assembly is the responsibility of specialized loading plants. Basic production methods for 155-mm casings had been developed at Frankford Arsenal in Philadelphia, the source of the Army's World War II ammunition-production planning program,[25] during the late 1930's, but effective, mass-production techniques did not appear until private contractors grappled with the problem on their own production lines in the early 1940's. Willys-Overland Motors Company played a leading role in this technological development, and their plant in Toledo, Ohio, became "the clearing house of information on the best method of manufacturing 155-mm shell [casings]."[26] Some ten years later, the production lines at Scranton AAP still resembled those which had been used at the Willys plant. The 155-mm and 8' production processes are similar, and will be described as they exist in 1983[27], the major changes introduced since the plant's activation have involved mechanization or computerization of processes formerly controlled by hand.

Twenty-foot steel bars arrive at the plant by rail and are each sawn or broken in the Forge Shop into 18 pieces called billets. The billets that will become 8" shells weigh 167 pounds; the 155-mm, 105 pounds. The

billets are heated in one of six rotary-hearth furnaces. Four of the furnaces are for 155-mm and two for 8" production. The forging operation has three parts. The hot billet is first given its basic shape in a preform press. The piece is passed to the pierce press where its interior cavity is formed and the overall length approximately tripled; it is then placed into the draw press where it is forced through a series of progressively smaller concentric rings. The rough shell then has its rough length and diameter. One particular type of 8" body is placed into another press to have its base removed. All bodies are then cooled in the subway.

After cooling, the shell bodies are transported through the subway to the Production Shop, for the rough turning operations. Projectiles are rough turned to outside diameter, and the ends rough faced. Excess material is removed in a ring shear operation, then the 8" projectiles are rough bored to inside diameter. The 155-mm shells are nosed at this point; the 8" shells will receive separate ogive (nose) units. On the 8" projectiles, the rotating bands, which will catch the riflings in the gun and spin to stabilize the projectile in flight, are now welded and stress relieved, i.e., heated to produce similar characteristics in the band and shell metal. In the 155-mm process, rotating bands will be press-fitted later.

In the Heat Treat Building, the shells are heated for hardness, quenched in oil, and reheated for tempering, after which they are cooled and tested for hardness. They are then conveyed to the Production Shop for the finish turns and grooving. Various fine finishing, threading and grinding processes are performed before the magnetic particle inspection for cracks under untraviolet light (for M509 only).

At this point the aluminum ogives for the 8" projectiles, which have been bought as rough forgings and finished in the Production Shop through a series of rough and finish turns, are assembled to their bodies. Lifting plugs are installed in both types of projectile, where the fuses will be, to facilitate handling, and the shells are cleaned, painted, baked, and prepared for shipping, by rail, from the north end of the Production Shop.

The U.S. Hoffman Machinery Corporation produced 8", 175-mm and 155-mm shells at Scranton AAP until their contracts were terminated in 1963.[28] "A highlight of the USHMC productin techniques was the development of the process of producing steel forgings utilizing A.S.T.M. Steel. Contractor's engineers, together with an Ordnance Corps task force, demonstrated that a commercial grade of steel (forging quality) could be used safely in manufacture of artillery shells instead of the higher priced shell quality steel. The use of this type of steel, purchased at a saving of $19 per ton, effected a saving of $2,440,000 annually in shell production."[29]

VIETNAM WAR

In June, 1963, operation of the Scranton AAP was taken over by Chamberlain Manufacturing Corporation, the low bidder (by 13-20%) for a contract for the manufacture of 175-mm, M437 projectiles.[30] Chamberlain, originally of Waterloo, Iowa, with corporate headquarters in Elmhurst, Illinois, is a wholly-owned subsidiary of the Duchossis-Thrall Group.

The company produces steel wire goods and machine tool accessories, storm doors and windows, and garage door openers, in addition to operating five defense plants, two for research and development, and three, including Scranton AAP, for production.[31]

Unlike many ammunition plants, Scranton AAP was never deactivated. Except for the three-month lapse in 1963 between the tenancies of USHMC and Chamberlain, the plant has been in continuous production since it was activated, and thus its activity is not tied exclusively to U.S. involvement in war. However, as the plant's activity brochure observes, "concurrent with increases in production in support of operation in Southeast Asia, an extensive modernization program was implemented with the rehabilitation of some present equipment and the purchase and installation of new equipment."[32]

Construction

The largest construction project undertaken during this period was the construction in 1970 of the Joiner Building between the Production Shop and the Heat Treat Building. This 13,750 square foot, steel-frame, steel-clad building houses the hardness testing equipment and shot blast cleaning equipment.[33] Several steel shed additions had been added to the north side of the Forge Shop by this time. Completed by 1975, the additions house presses used in the forging operation.[34]

Technology

Among the equipment added after the Vietnam War period were the electrochemical milling machines which cut dovetail grooves into the bodies of projectiles, a microprocessor-controlled lathe, which performs several finish milling operations, and computer-controlled furnaces in the Heat Treat Building.[35]

NOTES

1. Letter from Vance Packard, Office of Historic Preservation, Pennsylvania Historical and Museum Commission, to William Haynes, Chief Engineer, Scranton AAP, February 28, 1979.

2. The early history of Lackawanna Valley settlement and development and of the D.L. & W.R.R. is discussed in Chapters 1-10 of Robert J. Casey and W.A.S. Douglas, The Lackawanna Story (New York: McGraw-Hill Book Co., 1951).

3. Casey and Douglas, pp. 32-45.

4. Casey and Douglas, p. 45, report:

> The Egyptians are said to have made iron with hard coal five thousand years ago. Homer is authority for the Greeks having done likewise three thousand years ago. The process was seemingly forgotten and reinvented time and time again. The modern record shows that iron was made with anthracite coal at Cardiff, Wales, in 1836, an achievement of deep interest to the United States.
>
> In 1839 Benjamin Perry successfully smelted iron ore with antracite at the Pioneer Furnace, owned by William Lymann, in Pottsville, Pennsylvania. Mr. Lymann was so impressed with the importance of his foreman's contributions to the future of the iron industry that he arranged to give a grand banquet in Philadelphia on July 4, 1840. It is significant that among the invited guests was John Insley Blair [a partner in the Oxford Furnace, and later in the D.L. & W.R.R.], who, a few days later, . . . despatched two geologists and a surveyor to study and report on the iron-ore and anthracite-coal possibilities in Slocum's Hollow.

5. "Harrison," after the late U.S. President, was one of a series of names applied to "Slocum's Hollow" before it became "Scranton." Other attempts were "Unionville" and "Scrantonia."

6. According to a Pennsylvania Historical Museum Commission plaque at the remains of the Harrison Furnace.

7. Casey and Douglas, p. 48.

8. Solid "T"-section rail was at this tume replacing the built-up "strap" rail used previously. See Casey and Douglas, pp. 50-54, and the note to p. 44.

9. Some idea of the transportation problems faced by the Scrantons can be gained from an outline of their routes. A plaque in the remains of the Harrison Furnace reads in part:

> Iron from the Scranton Plant was shipped to New York, Philadelphia, and Baltimore. Products destined for New York were carted to Carbondale by mule team, shipped to Honesdale via the Delaware and Hudson Canal Company's gravity railroad, then carried by canal and railroad to the city. Other iron goods were hauled by teams to Port Barnum near Pittston, and shipped down the north branch of the Pennsylvania Canal to Philadelphia, or on down the Susquehanna and Tidewater Canal to Baltimore.

10. Casey and Douglas, pp. 128-129.

11. The aims and results of Truesdale's program are outlined in a eulogy delivered to the Board of Managers of the railroad at his retirement in 1925, and quoted in Casey and Douglas, pp/ 151-153. The Scranton shops are presented in their context of this program in "The New Locomotive Repair Shops of the Lackawanna Railroad at Scranton, Pa.," In The Railway Age, 43 (Apr. 12, 1907) 597.

12. "The Scranton Locomotive Shops of the Lackawanna Railroad," The Engineering Record, 60 (Oct. 16, 1909), 427. The long disentangelment of the D.L. & W. from its coal interests, as required by the Commodities Clause of the Hepburn Act of 1906, is chronicled in Casey and Douglas, pp. 145-150.

13. George L. Fowler, "Scranton Shops of the Delaware, Lackawanna & Western," Railroad Age Gazette, 47 (Nov. 5, 1909), 870-871. See also "The Scranton Locomotive Shops" and "The New Locomotive Repair Shops," pp. 579-599.

14. Railway Age Gazette, 48 (Feb. 4, 1910), 221. It is possible that the editorial is the work of George L. Fowler, Associate Editor of the Gazette, who whote at least two of that publication's series of three articles on the Scranton shops.

15. Casey and Douglas, p. 137. See also "The Scranton Locomotive Shops," p. 427.

16. Casey and Douglas, pp. 137. 141-144.

17. See "The Scranton Locomotive Shops," p. 427.

18. The Scranton Locomotive Shops," p. 427.

19. Schematic designs for the entire complex were published about the time construction began, in The Railway Age ("The New Locomotive Repair Shops"). The power situation after construction is decribed in "Power Development for the Scranton Shops," Railway Age Gazette, 48 (Jan 7, 1910), 7. The Power House which was constructed later is indicated on a Ray/Nies site plan dated 8-10-11, and can be seen in undated aerial photographs obtained from Scranton AAP.

20. "DARCOM Installation and Activity Brochure," p. 1. The available information does not detail the specific site-selection process for Scranton AAP. However, a look at the criteria used in evaluation locations for ammunition plants constructed during World War II may be instructive. These considerations, as published in Small Arms Ammunition, vo. 1, pp. 107, 143, include:

    (1) availability of suitable labor without major housing projects
    (2) proximity to a main railroad line
    (3) availability of adequate electric power
    (4) availability of natural or artificial gas for processing purposes
    (5) ample supply of water for processing purposes
    (6) mid-continental location as a defense against enemy bombardment

    The Scranton site can easily be seen to satisfy all these criteria except (6), which seems not to have been rigidly adhered to after World War II. In addition, after the construction of the first six plants in 1940-1942, the option of reusing existing commercial/industrial space, where available, seems to have been preferred to new construction, a trend which the Scranton location fits well.

21. According to Captain Patrick Dunkle, Executive Officer of the Scranton AAP in March, 1983, the Power House was demolished in 1983.

22. Transfer of Construction form D.L. & W.R.R. Co. to U.S. Army Ordnance Corps, 15 Sept., 1954, Exhibit A (Oct. 12, 1955).

23. This discussion of the remodeling of 1952-1953 is based on field observations and photographs made during a tour of the facility conducted by Captain Patrick Dunkle on March 28, 1983, and on working drawings for the remodeling by Gilboy and O'Malley, Engineers and Architects, on file in the Administration Building, Scranton AAP.

24. Detailed production information on the Willys-Overland Motor Company's shell-casing plant is found in Joseph Frazer, "Millions of 155-Millimeter Shells," Ordnance Production Methods, ed. Charles O.

Herb (New York: Industrial Press, 1951), pp. 83-97. This discussion of the production process at Scranton AAP is based on a tour of the facility conducted by Captain Patrick Dunkle on March 28, 1983, and on several publications obtained from Scranton AAP, particularly "Production Process Flow for the M509 Projectile" and "Scranton Army Ammunition Plant Production Flow."

25. Harry C. Thomson and Lida Mayo, The Ordnance Department: Procurement and Supply (Washington, D.C.: Office of the Chief of Military History, Department of the Army, 1960), p. 191-192. See also Small Arms Ammunition, vol. 1, pp. 69-71.

26. Frazer, p. 83.

27. As of 1983, the 175-mm production line is not in operation at Scranton AAP, and the machines are in storage.

28. "On 14 March 1963, a work stoppage was called by union officials, the result of a labor dispute. On 25 March 1963, for the convenience of the government, all contracts with USHMC were terminated." (DARCOM Installation and Activity Brochure, p. 1.)

29. "DARCOM Installation and Activity Brochure," pp. 1-2.

30. Tom Casey, "Size of Shell Plant Fires Imagination,"The Scrantonian, Sunday, Jan. 31, 1965.

31. "Army Ammunition Plant Profile," p. 15.

32. "DARCOM Installation and Activity Brochure," p. 2.

33. See the construction drawings, on file in the Administration Building, Scranton AAP.

34. Two "waves" of construction of these sheds may perhaps be dated by two waves of acquisition of hydraulic presses for the Forge Shop, in 1966 and 1970, respectively, indicated by the Army's Semi-Annual Inventory RCS: DRC-828 (SP-38) for 1 Nov. 1982, prepared by Defense Industrial Plant Equipment Center, Memphis, Tenn. 38114.

35. Army Inventory, 1 Nov. 1982.

Chapter 3

PRESERVATION RECOMMENDATIONS

BACKGROUND

Army Regulation 420-40 requires that an historic preservation plan be developed as an integral part of each installation's planning and long-range maintenance and development scheduling.[1] The purpose of such a program is to:

- Preserve historic properties to reflect the Army's role in history and its continuing concern for the protection of the nation's heritage.
- Implement historic preservation projects as an integral part of the installation's maintenance and construction programs.
- Find adaptive uses for historic properties in order to maintain them as actively used facilities on the installation.
- Eliminate damage or destruction due to improper maintenance, repair, or use that may alter or destroy the significant elements of any property.
- Enhance the most historically significant areas of the installation through appropriate landscaping and conservation.

To meet these overall preservation objectives, the general preservation recommendations set forth below have been developed:

Category I Historic Properties

All Category I historic properties not currently listed on or nominated to the National Register of Historic Places are assumed to be eligible for

nomination regardless of age. The following general preservation recommendations apply to these properties:

a) Each Category I historic property should be treated as if it were on the National Register, whether listed or not. Properties not currently listed should be nominated. Category I historic properties should not be altered or demolished. All work on such properties shall be performed in accordance with Sections 106 and 110(f) of the National Historic Preservation Act as amended in 1980, and the regulations of the Advisory Council for Historic Preservation (ACHP) as outlined in the "Protection of Historic and Cultural Properties" (36 CFR 800).

b) An individual preservation plan should be developed and put into effect for each Category I historic property. This plan should delineate the appropriate restoration or preservation program to be carried out for the property. It should include a maintenance and repair schedule and estimated initial and annual costs. The preservation plan should be approved by the State Historic Preservation Officer and the Advisory Council in accordance with the above-referenced ACHP regulation. Until the historic preservation plan is put into effect, Category I historic properties should be maintained in accordance with the recommended approaches of the Secretary of Interior's Standards for Rehabilitation and

Revised Guidelines for Rehabilitating Historic Buildings[2] and in consultation with the State Historic Preservation Officer.

c) Each Category I historic property should be documented in accordance with Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) Documentation Level II, and the documentation submitted for inclusion in the HABS/HAER collections in the Library of Congress.[3] When no adequate architectural drawings exist for a Category I historic property, it should be documented in accordance with Documentation Level I of these standards. In cases where standard measured drawings are unable to record significant features of a property or technological process, interpretive drawings also should be prepared.

Category II Historic Properties

All Category II historic properties not currently listed on or nominated to the National Register of Historic Places are assumed to be eligible for nomination regardless of age. The following general preservation recommendations apply to these properties:

a) Each Category II historic property should be treated as if it were on the National Register, whether listed or not. Properties not currently listed should be nominated. Category II historic properties should not be altered or demolished. All work on such properties shall be performed

in accordance with Sections 106 and 110(f) of the National Historic Preservation Act as amended in 1980, and the regulations of the Advisory Council for Historic Preservation (ACHP) as outlined in the "Protection of Historic and Cultural Properties" (36 CFR 800).

b) An individual preservation plan should be developed and put into effect for each Category II historic property. This plan should delineate the appropriate preservation or rehabilitation program to be carried out for the property or for those parts of the property which contribute to its historical, architectural, or technological importance. It should include a maintenance and repair schedule and estimated initial and annual costs. The preservation plan should be approved by the State Historic Preservation Officer and the Advisory Council in accordance with the above-referenced ACHP regulations. Until the historic preservation plan is put into effect, Category II historic properties should be maintained in accordance with the recommended approaches in the Secretary of the Interior's Standards for Rehabilitation and Revised Guidelines for Rehabilitating Historic Buildings[4] and in consultation with the State Historic Preservation Officer.

c) Each Category II historic property should be documented in accordance with Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) Documentation Level

II, and the documentation submitted for inclusion in the HABS/HAER collections in the Library of Congress.[5]

Category III Historic Properties

The following preservation recommendations apply to Category III historic properties:

a) Category III historic properties listed on or eligible for nomination to the National Register as part of a district or thematic group should be treated in accordance with Sections 106 and 110(f) of the National Historic Preservation Act as amended in 1980, and the regulations of the Advisory Council for Historic Preservation as outlined in the "Protection of Historic and Cultural Properties" (36 CFR 800). Such properties should not be demolished and their facades, or those parts of the property that contribute to the historical landscape, should be protected from major modifications. Preservation plans should be developed for groupings of Category III historic properties within a district or thematic group. The scope of these plans should be limited to those parts of each property that contribute to the district or group's importance. Until such plans are put into effect, these properties should be maintained in accordance with the recommended approaches in the Secretary of the Interior's Standards for Rehabilitation and Revised

Guidelines for Rehabilitating Historic Buildings[6] and in consultation with the State Historic Preservation Officer.

b) Category III historic properties not listed on or eligible for nomination to the National Register as part of a district or thematic group should receive routine maintenance. Such properties should not be demolished, and their facades, or those parts of the property that contribute to the historical landscape, should be protected from modification. If the properties are unoccupied, they should, as a minimum, be maintained in stable condition and prevented from deteriorating.

HABS/HAER Documentation Level IV has been completed for all Category III historic properties, and no additional documentation is required as long as they are not endangered. Category III historic properties that are endangered for operational or other reasons should be documented in accordance with HABS/HAER Documentation Level III, and submitted for inclusion in the HABS/HAER collections in the Library of Congress.[7] Similar structures need only be documented once.

CATEGORY I HISTORIC PROPERTIES

There are no Category I historic properties at the Scranton AAP.

CATEGORY II HISTORIC PROPERTIES

Pattern Shop (Administration Building, Building 100)

Foundry (Forge Shop, Building 200)

Blacksmith Shop (Heat Treat Building, Bulding 300)

Machine and Erecting Shop (Production Shop, Building 400)

. Background and Significance: The four major buildings at Scranton AAP were constructed in 1907-1909 as the Scranton Locomotive Shops of the Delaware, Lackawanna & Western Railroad. Founded by the founders of the city of Scranton and directly connected with their coal and iron mining and production operations, this railroad played a leading role in the development of the city and the surrounding region. The Scranton Locomotive Shops were built as part of an extensive modernization program undertaken by the railroad after 1899, and were considered at the time to represent that period's most advanced concepts regarding planning and design of such facilities.

When the Locomotive Shops were converted into a shell-production facility in 1952-1953, only minimal modification of the buildings was necessary, and no major structures were demolished. The Scranton Locomotive Shops, then, can be seen substantially intact in the present Scranton AAP. In the immediate vicinity, but outside the boundaries of Scranton AAP, also survive the D.L. & W.'s office and storage building, and the ruins of the Scranton Brothers' original furnaces of 1840. The history of the Locomotive Shops, their construction and conversion into the Scranton AAP, and an overview of

early D.L. & W., Scranton, and Lackawanna Valley development may be found in Chapter 2.

All four major buildings at Scranton AAP are Category II properties because of the regional importance of the D.L. & W. Railroad. Considered as a whole, this ensemble of buildings is a characteristic and remarkably intact early twentieth-century locomotive shop facility.

In terms of the eligibility requirements for nomination to the National Register of Historic Places, the Scranton AAP buildings not only possess integrity of location, setting, feeling, and association, but contribute substantially to the character and historic integrity of their environs. In design, materials, and workmanship, the shops were considered outstanding in their own time and have survived in good condition and without significant alterations. The complex, therefore, is eligible for the National Register of Historic Places and is recommended for nomination by the State Historic Preservation Office.

- Condition and Potential Adverse Impacts: The buildings at the Scranton AAP are all in good condition. There currently are no plans to alter or demolish them.

- Preservation Options: Refer to the general preservation recommendations at the beginning of this chapter for Category II historic properties.

CATEGORY III HISTORIC PROPERTIES

There are no Category III historic properties at the Scranton Army Ammunition Plant.

NOTES

1. Army Regulation 420-40, Historic Preservation (Headquarters, U.S. Army: Washington, D.C., 15 April 1984).

2. National Park Service, Secretary of Interior's Standards for Rehabilitation and Revised Guidelines for Rehabilitating Historic Buildings, 1983 (Washington, D.C.: Preservation Assistance Division, National Park Service, 1983).

3. National Park Service, "Archeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines," Federal Register, Part IV, 28 September 1983, pp. 44730-44734.

4. National Park Service, Secretary of the Interior's Standards.

5. National Park Service, "Archeology and Historic Preservation."

6. National Park Service, Secretary of the Interior's Standards.

7. National Park Service, "Archeology and Historic Preservation."

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Casey, Tom, "Size of Shell Plant Fires Imagination," The Scrantonian, Sunday, Jan. 31, 1965. Newspaper feature article, vague on * production process but informative on Chamberlain.

Engineering Index. 1938-1980.

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